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Research paper

The Role of Corporate Reputation & Distinctive Organization Capability in Developing Business Model Innovation: Case study of Indonesia ICT Firm in Facing Industry Resolution 4.0

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Abstract

Business model innovation is key important in facing industry 4.0 where the digital technology through internet and mobile influences the life style of people. Our paper has objectives to provide the antecedents of Business model innovation and to compare the impact between corporate reputation and distinctive organizational capability in developing business model innovation. The study is based on digital disruption phenomenon, where established companies are disrupted the new business model by new entrance through leveraging digital capability. The study is focusing on Information, Communication and Technology (ICT) incumbent companies in developing business model innovation as the second curve to sustain their business. ICT industry is the important sector to enable the development in other industry and has significant influence in economic growth. Currently, the higher economy growth relies on the emerging market such as Indonesia. Indonesia ICT market has unique characteristics where the innovation has grown rapidly but the infrastructure lacked behind and also the market was very competitive. Hence, there was the gap between the opportunity in innovation and the development of digital infrastructure, and for incumbent firm was the mitigation of investment risk of the ICT infrastructure and compete with new entrance that bring new business model and market. The Incumbent has the advantage of the corporate reputation and required to develop the new capability in providing the distinctive capability. However, the study of developing business model innovation for incumbent firm in market focus on corporate reputation has limited. The study is done through empirical research using 35 samples of Indonesia ICT firm. The analytical approach and the solution technique used Smart Partial Least Square (PLS). The Research finding shows that the distinctive organization capability has significant influence compare with the corporate reputation in developing business model innovation. The study has the implication that in theory, in developing business model innovation focus on distinctive organization capabilities rather that rely on corporate reputation. It means the ICT Incumbents firms are required to transform their capability align with market change. For managerial management, this study has implication the urgency in developing distinctive organizational capability in respective units, especially in intangible asset. Further research can be enhanced by expanding the research sample and industry, and also can be expanded into longitudinal study as part of transformational model for incumbent firms.

***Keyword**: Business model Innovation, distinctive organization capabilities, corporate reputation, industry 4.0.*

1. Introduction

digital technology has significant influence in industry 4.0 bringing the major impact in changing market and competition for all industry. a new entrance threats the incumbent firms through new business model creating new market and customer. the phenomenon where the incumbent firms fails in maintain the competitive advantages has discussed intensively by christensen [13] and herein called as disruption innovation. in industry 4.0, where digital technology taken a significant consideration, a remarkable example of digital disruption can be found in ict sectors, especially in telecommunication industry. the convergences platform due to internet technology, make over the top (ott) has the substitute product to compete with existing offered products from incumbent players. the ott could offer the alternative solution to customer with similar product but with cheaper price, even free. the striking example of digital disruption in telecommunication is the substituting of text messaging and voice service with offered service by whatsapp, line, weechat, blackberry messengers. the digital disruption is not only occurred in telecommunication, but also other industry, for example in banking industry, fintech services have disrupted banking core businesses. however, telecommunication has been found as the industry where the incumbent firm has potential lose their place due to digital disruption [30]. telecommunication is critical for a country competitiveness, since telecommunication contributes positive impact to economy growth [49]. there was a correlation between ict or telecommunication infrastructure especially digital infrastructure with the nation competitiveness [24]. the ict incumbent firm is playing an important role in developing digital ict infrastructure, since they have infrastructure, capital, customer base, and also brand reputation already. conversely, the incumbent firms are most likely disrupted by new entrance [30]. the incumbent firms are required to transform their digital business to sustain their business. according to resources based view (rbv) theory [7], the incumbent firms require developing distinctive organization capabilities. since the business model innovation become an important role within the industry 4.0, hence the next questions are how is the

antecedent in developing business model innovation? the second question is what is the first priority between organizational capabilities and corporate reputation in developing business model innovation?
all those respective questions are related with indonesia ict digital market. in developing digital, currently indonesia in the early state of digital development [15]. this means a huge opportunity is exist, yet it is required a big investment. compare with any other country in the world, indonesia's digital competitiveness is ranked at 59th globally. there is some gap with indonesian competitiveness rank where indonesia is ranked at 42nd [24]. this gap is indicating that there is an opportunity for indonesia ict digital to contribute in developing nation competitiveness. hence, the strengthening of indonesia ict firms is urgently needed. another interesting data can be found, in terms of innovation growth, indonesia is recorded as the one of the countries where growth innovation is quite high [24], and in terms of startup company numbers, indonesia is ranked at 6th place in the word [42]. another indication that shows indonesia's innovation growth rapidly high is the indication of social media and internet activities. in terms of facebook users, the percentage of electronic commerce activities, and the length of time spending on the internet, indonesia is recorded higher compared to usa users [15].
those opportunities, can be captured by indonesia incumbent ict, if the firms could transform their digital business by focusing on business model innovation. This transformation is developed by combining and strengthening the strong corporate reputation and develop new capabilities in distinctive organizational capabilities.
The effect examination of corporate reputation and distinctive organization capability on business model innovation of telecommunication firms in Indonesia are explored in this paper. This paper will discuss empirical study start with background, literature review, methodology, result and discussion, conclusion, implication and further research.

2. Literature Review

A. Industry Resolution 4.0 and Digital Transformation

Industry resolution 4.0 is known as the conceptual era [35], due to internet and information technology. Industry 4.0 impacts to globalization that change not only market and competition but

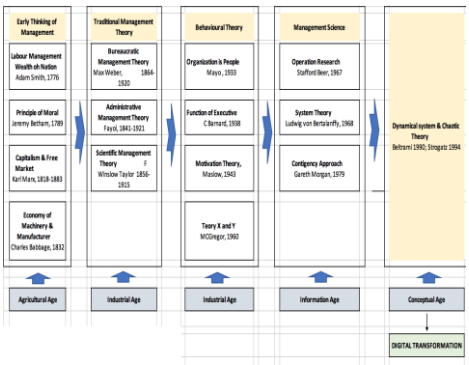

Fig. 1. History of Management and indsutry 4.0

also the whole ecosystem [44]. The main drivers of industry 4.0 are innovation, collaboration, and integration of process that makes the process shorter and simpler through ICT system [8][27]. In history of management, industry 4.0 is the modern phenomenon that closed with digital transformation, as shown in figure 1.
In telecommunication industry, industry 4.0 represents the solution based on Internet of Things (IoT). The product solution could be fulfilled through collaboration with respective stakeholders to innovate business models through digitize system [26], sharing economy [33] and virtualization [34].
In anticipating the changing due to industry resolution 4.0, the incumbent firms required to transform their existing business and the way in doing business in digital matter. Otherwise, the new entrance will disrupt the business [13]. The incumbent firms are required to integrate with the existing operation process of digital capabilities [9][14]. The firms require digital transformation where the dynamic and distinctive organization capability are integrated with existing assets. Transformation is defined as the changing paradigm of the firm activities.
The digital transformation has two sides of model [16][32], despite by providing opportunity in revenue, it also provides the efficiency in terms of process and speed in decision making. The revenue opportunity is related with upstream business model collaboration with customers, and the cost efficiency related with process and business model collaboration with partners and suppliers. The study of mobile operators showed that the left side is content provider and the right side is customer, while the operator has the role of creating business model innovations [36]. In practice, Mc Kinsey [15] has developed 4 digital transformation paths, through innovation in product and services, business model, process and all aspect in product, business model and process. The highest result of survey can be achieved when digital transformation has done through business model.
Business model innovations are important to boost achievement of competitive advantage [3]. In addition, in the practical world, business models are related to higher operating profits, and become a hot topic for Corporate CEOs [23]. Business model innovation is the key success in commercialization of technology-based product [12][11][21]. On the generic level, there are many studies on business innovation models [1][2][32][20][10][31]. The development of business model requires strengthening the strong capabilities such as brand reputation, capital, customers [30] and develop the internal competitiveness by expanding the range of complementary capabilities and assets formed around core technology, and related business models [43], and with the capabilities on the network side combined with network and social capabilities are expected to create distinctive organizational capability.

B. Corporate Reputation

Corporate reputation is defined as an aggregate composite of all previous transactions over the life of the entity, and a snapshot that reconciles images of a company held by all its constituencies to create value to firms [46].
Corporate reputation is the part of incumbent firm strength compare to new entrance [30]. Study found that corporate reputation is represent the competitive advantage and it can strengthening profit [18]. Furthermore, it is part of corporate sustainability and value [29] where the intangible value such as customer value, organization value could drive more cash generating [37].
The antecedent of corporate reputation is related with company track record and program including customer loyalty, trust, customer satisfaction related with product and service and world of mouth closed to brand and quality [46][29]. Based on the description above, the used dimension in this paper consists of loyalty, trust, products & services quality, as well as brand performance.

C. Distinctive Organization Capabilities

Based on strategic management framework [5], the organization capabilities could be evaluated in relation with current and future performances [19] and provide descriptive plans and prescriptive diagnoses. The role of manager and Top Management level is necessary to measure, since it impacts to the most aspect in organization such as working environment, management climate, competence and capacity [5].
The study of distinctive organization capability in digital era consists of 3 kinds capabilities: leadership and vision related with digital capabilities, culture and people, and corporate process and structures [25]. Leadership and vision are the most important part in digital transformation, especially in digital leadership [47]. Digital leadership is defined as capability and capacity that is able to encourage the creation of creativity by utilizing digital technology to create value. [39]. The culture is defined as the distinctive of organization behavior in value creation. The structure and the process are defined as a lean processes and operations that are agile to change. These three capabilities, coupled with governance as key dimension in this study.

D. Business Model innovation

Business models are defined as the company's efforts in creating value through innovate and integrate with existing business processes to fulfill customer value [17]. Business model innovation emerges as an alternative to process and product innovation in digital transformation [16]. The role of managers and entrepreneurs are significant to create additional value in a specific time [4][3]. Business model innovation is a part of strategic re-arrangement of business activities to form a new business model, with greater value than previously using digital technology. Business models is a new holistic, integrated and systematic way for organizations to provide the operation of innovations in order to create value in a dynamical environment through collaboration with their internal and external stakeholders [1][51][50]. The role of business model innovation depends on the business model's content, what is the context in terms of developing business model and is it governance with the defined rules [2][3][4], hence the dimensions used in this study are Content innovation, Structure Innovation, and Governance Innovation Delivery.

E. Research Model and Relationship among Variables

Developing business model innovation is cascaded based on strategic management perspective [48], consisting of internal factor and external factors. Internal factors are distinctive organization capabilities and external factors are corporate reputation.

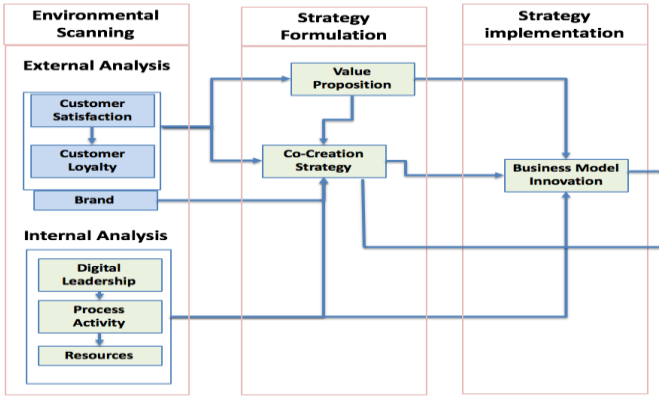

Fig. 2. Research model Framework

The study is conducted by Schaltegger, et al [40] demonstrates the role of corporate reputation and brand in leveraging the sustainability competitiveness included in the business model innovation. Another study was also show that business model innovation could increase rank of corporate reputation [6] and also gives impact to the company value [29]. Based on these past studies, it can be concluded:
H1 Corporate reputation has positive effect to business model innovation.
Distinctive organization capability is important in driving a business model innovation, due to leadership [41], innovation management and organization [28]. Empirical study by Hurley and Hult [22] shows that an organization's capability of learning and market orientation supports innovation. The previous studies indicate that the distinct organization capabilities have positive influence on business model innovation.

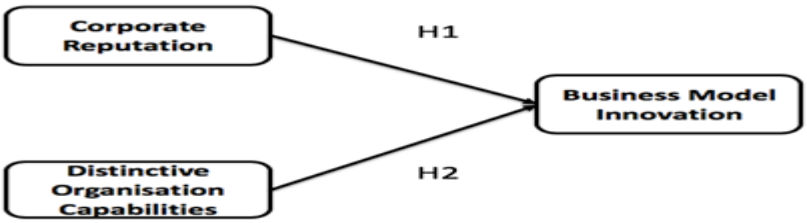

Fig. 3. Research Model

Based on the literature study, the following hypotheses were prepared:

H2: Distinctive organization capabilities has positive effect to business model innovation.

3. Methodology

This study uses Quantitative Research, the unit of analysis in this study is the ICT firms in Indonesia with the observation unit is the management of these firms. Population is a combination of all elements that have a series of similar characteristics [31] The target population in the study is telecommunications network firms in Indonesia which includes the Internet Service Provider (ISP), satellite, tower, Telkom Subs, affiliates. Based on the documentation study, it is known that there are 312 ISP firms (APPJI, 2017), 34 Satellite firms, 27 Towers, and 72 Telkom subsidiaries and Affiliates. Hence, the total number of telecommunication firms in Indonesia is 445 companies. The Sampling used is purposive sampling method. The sample size is 35 Firms representing from ICT Industry from Network Providers, service providers and supply chain partners in content.

Table 1: Distribution respondents

Segment	Board/C Level	VP Levels	GM Level	Mgr Level
NetworkProvider	3	16	3	1
Service Provider	2	1	3	0
Partners	4	0	1	1
TOTAL	**9**	**17**	**7**	**2**

Data was collected via self-assessment through website questionnaire and distributed through social media application such as Messenger, WhatsApps, and Telegram or by email. Respondent profiles are dominated by senior leader
having a position in the company as a director or senior manager (GM level above) (95%). The analytical approach and solution techniques that will be used as a tool of analysis is PLS (Partial Least Square).

4. Result and discussion

4.1. Result of Model Analysis Using PLS

1) Evaluation of Measurement Model (Outer Model)

The analysis of outer model specifies the relationship between latent variables and their indicators. Tests performed on outer models include:

- Convergent Validity. Based on Average Variance Extracted (AVE). The value of convergent validity is the value of loading factor on the latent variable with its indicators. Expected value> 0.5.
- Composite Reliability. Data that has composite reliability> 0.7 has high reliability.

Table 2: Outer Lpading, Croncbach Alpha,.Composite Reliability & AVE

Dimension		Outer Loading	Cronbach Alpha	Composite Reliability	AVE
Corporate Reputation			**0.879**	**0.917**	**0.736**
Trust	Trust1	0.723	0.822	0.882	0.652
	Trust2	0.720			
	Trust3	0.678			
	Trust4	0.798			
Product Quality	Product1	0.693	0.713	0.874	0.776
	Product2	0.801			
Brand Reputation	Brand1	0.724	0.879	0.917	0.736
	Brand2	0.808			
	Brand3	0.795			
	Brand4	0.878			
Customer Loyalty	Loyalty1	0.699	0.815	0.890	0.729
	Loyalty2	0.729			
	Loyalty3	0.869			
Distinctive Organization Capability			**0.913**	**0.928**	**0.544**
Digital Leadership	DV1	0.790	0.710	0.873	0.775
	DV2	0.698			
Digital Culture	DC1	0.791	0.797	0.882	0.714
	DC2	0.715			
	DC3	0.751			
Digital Agility	DA1	0.751	0.831	0.899	0.747
	DA2	0.813			
	DA3	0.801			
Governance	Gov1	0.960	0.821	0.916	0.846
	Gov2	0.725			
Business Model Innovation			**0.941**	**0.953**	**0.719**
Content Innovation	Ci1	0.874	0.956	0.971	0.919
	Ci2	0.966			
	Ci3	0.970			
Structural Innovation	SI1	0.874	0.813	0.891	0.735
	SI2	0.880			
	SI3	0.597			
Governance Innovation	Gove1	0.768	0.829	0.920	0.853
	Gove2	0.921			

In the table 2 above depicted that AVE value> 0.5. Cronbach Alpha> 0.6 and composite reliability> 0.7. so that research variables have good reliability for all variable and dimension.

Table 3: Discriminant Validity

		1	2	3	4	5	6	7	8	9	10	11
1	Brand Reputation	0.858										
2	Content Innovation	0.245	0.959									
3	Customer Loyalty	0.504	0.671	0.854								
4	Digital Agility	0.423	0.588	0.653	0.864							
5	Digital Culture	0.556	0.503	0.622	0.878	0.845						
6	Digital Leadership	0.290	0.606	0.668	0.775	0.684	0.880					
7	Governance	0.327	0.288	0.472	0.506	0.557	0.364	0.920				
8	Governance Innovation	0.488	0.752	0.537	0.635	0.526	0.586	0.220	0.923			
9	Product Quality	0.765	0.329	0.755	0.535	0.571	0.470	0.376	0.455	0.881		
10	Structure Innovation	0.368	0.856	0.754	0.771	0.671	0.747	0.349	0.737	0.512	0.857	
11	Trust	0.576	0.693	0.805	0.576	0.593	0.561	0.369	0.545	0.684	0.724	0.808

Discriminant validity can be calculated based on Table 3. The diagonal bold numbers indicate the square root of AVE. If diagonal bold numbers are bigger than horizontally listed numbers, these mean the measurement model has good discriminant validity. In Table 3 only digital culture has the horizontal listed is slightly higher than diagonal, but the rest all dimension has good discriminant validity.
The value of convergent validity is the value of the loading factor of outer path analysis. t value > t table (2.04) and p value < 0.05 means each indicator is a valid measurement tool in measuring latent variables.

Table 4: Outer Path Analysis

	Mean	Standard Deviation	T Statistics	P Values	Remarks
Brand1 <- Brand Reputation	0.878	0.058	15.392	0.000	Valid
Brand2 <- Brand Reputation	0.842	0.090	9.427	0.000	Valid
Brand3 <- Brand Reputation	0.782	0.094	8.382	0.000	Valid
Brand4 <- Brand Reputation	0.895	0.047	19.010	0.000	Valid
CI1 <- Content Innovation	0.938	0.040	23.789	0.000	Valid
CI2 <- Content Innovation	0.963	0.017	56.020	0.000	Valid
CI3 <- Content Innovation	0.957	0.024	40.253	0.000	Valid
DA1 <- Digital Agility	0.834	0.093	9.114	0.000	Valid
DA2 <- Digital Agility	0.881	0.038	23.393	0.000	Valid
DA3 <- Digital Agility	0.861	0.049	17.708	0.000	Valid
DC1 <- Digital Culture	0.872	0.041	21.422	0.000	Valid
DC2 <- Digital Culture	0.884	0.038	23.291	0.000	Valid
DC3 <- Digital Culture	0.759	0.089	8.627	0.000	Valid
DV1 <- Digital Leadership	0.895	0.045	20.053	0.000	Valid
DV2 <- Digital Leadership	0.850	0.084	10.313	0.000	Valid
Gov1 <- Governance	0.945	0.021	45.148	0.000	Valid
Gov2 <- Governance	0.880	0.083	10.838	0.000	Valid
Gove1 <- Governance Innovation	0.915	0.034	26.890	0.000	Valid
Gove2 <- Governance Innovation	0.938	0.021	44.711	0.000	Valid
Loyalti1 <- Customer Loyalty	0.824	0.073	11.418	0.000	Valid
Loyalti2 <- Customer Loyalty	0.908	0.032	28.643	0.000	Valid
Loyalti3 <- Customer Loyalty	0.824	0.054	15.174	0.000	Valid
Product1 <- Product Quality	0.853	0.065	13.129	0.000	Valid
Product2 <- Product Quality	0.908	0.020	44.410	0.000	Valid
SI1 <- Structure Innovation	0.908	0.045	20.165	0.000	Valid
SI2 <- Structure Innovation	0.934	0.028	33.173	0.000	Valid
SI3 <- Structure Innovation	0.712	0.111	6.253	0.000	Valid
Trust1 <- Trust	0.778	0.099	7.881	0.000	Valid
Trust2 <- Trust	0.862	0.064	13.664	0.000	Valid
Trust4 <- Trust	0.780	0.100	7.831	0.000	Valid
trust3 <- Trust	0.796	0.054	14.663	0.000	Valid

Table 4 shows. All constructs have path coefficient score with t-statistics more than 1.96 and p-value = 0.000 <0.05, which means that all constructs have significant association with their dimensions.

4.2. Structural Model (Inner Model)

In calculating score of blindfolding, Q2was obtained for Business model innovation = 0.334. If Q2 is greater than zero, it indicates that the structural model has adequate predictive relevance. The evaluation of inner model can be done through three ways, namely by viewing the value of $R^2$and GoF. as shown in table 5 below

Table 5: R Square and GoF

	R Square	GOF
Corporate Reputation		0.551
Distinctive Oorganization Capability		
Business Model Innovation	0.541	

According to Tenenhaus [45] the value of GoF small = 0.1, GoF medium = 0.25 and GoF large = 0.38. From the testing of R^2, and GoF, it is seen that the model formed is robust. So that hypothesis testing can be done.

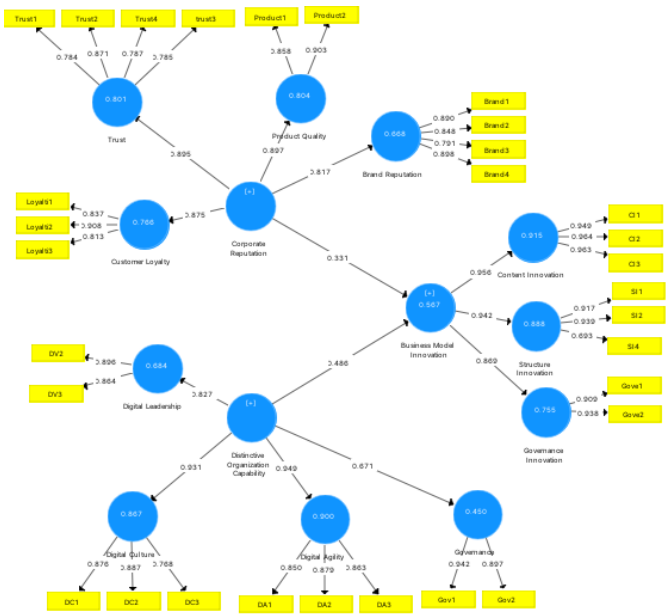

Fig. 4. Complete Path Diagram of Research Model

Based on the research framework, a structural model: as follow:

$$\eta = 0.332\xi_1 + 0.487\xi_2 + \zeta_1$$

4.3. Hypothesis Testing

Below is the result of hypothesis testing:

Table 6: Testing of Hypothesis

	Path	Standard Deviation	T Statistics	P Values	Remarks
Corporate Reputation -> Business Model Innovation	0.332	0.233	1.422	0.155	Not Supported
Distinctive Organization Capability -> Business Model Innovation	0.487	0.204	2.390	0.017	Supported

* significant at α=0.05 (T statistics > 1.96)

Based on the Table 6, it is known that within the degree of confidence of 95% (α=0.05), there is the influence of customer experience and distinctive organization capability to business model innovation amounted to 81.9%, while the rest of 18.1% is affected by other factors did not examined.

Partially, the relationship between distinctive organization capability and business model innovation has path coefficient score of 0.487 with t-Statistics = 2.390 and p-Value = 0.017. This means that H0 is rejected and H1 is accepted. It proves that distinctive organization capability has a positive and significant impact on business model innovation. Path coefficient of corporate reputation to b is 0.199 business model innovation with t-statistics = 1.422 and p-value = 0.155. It means that H0 is accepted while H2 is rejected. There is no significant impact of corporate reputation on business model innovation.

The results show that corporate reputation and distinctive organization capability are influential to business model innovation. Business model innovation is more dominantly formed by distinctive organization capability rather than by corporate reputation. These findings are aligned with theory of resources-based view where the resources shall be valuable, rare, imperfectly imitable and non-substitutable[7]. The result is also strengthening the phenomenon of disruptive innovation, where incumbent firms could not only rely on corporate reputation in building innovation[13][32]. They required to build the distinctive organization capability to compete with competitors and new entrances. The distinctive organizational capability is more dominantly shaped by digital agility, then digital culture, digital leadership, where in innovation culture the governance aspects, where the important aspect but in the last priorities compare to others.

The distinctive organization capability is more dominantly formed by digital agility. This is achieved if the company is able to conduct a direct digitalization, able to implement agile operations, and able to develop digital channel integration. The results of this study support the findings of Schweitzer [41], Kuznetsov [28], and Hurley and Hult [22] which show that an distinctive organization capability has significant influence on innovation. Meanwhile, the distinctive organizational capability is important in driving a business model innovation, due to leadership [41], innovation management and organization [28].

The findings were also reminding the incumbent firms not to rely on existing capabilities such as corporate reputation, capital and customer base [30] where currently the strong capabilities but used the existing strong capabilities to develop distinctive organization capabilities to build business model innovation.

5. conclusion, implication and further study

5.1. Conclusion

Based on the results of hypothesis it can be concluded that distinctive organization capability and corporate reputation are influencing in developing Business Model Innovation on telecommunication firms in Indonesia. Business model innovation is more dominantly formed by distinctive organization capability rather than corporate reputation. This is aligned with the disruptive innovation phenomenon where

the incumbent firms are required to innovate and build the distinctive capabilities to create sustainability business and value creation. These findings have practical implications for the management that the development of Business model innovation needs to be based on the strong and uniqueness organization capability. Distinctive organization capability is primarily built, digital agility, digital culture and digital leadership in facing industry 4.0. those factors are important for transforming digital capability.
The further study can be explored through extend sampling, industry and also market in overseas and it can be studied using longitudinal period to ensure that the business model innovation continue has significant contribution to the firm.

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